

Identification and Reduction of Turbomachinery Noise, Phase I

Completed Technology Project (2006 - 2006)



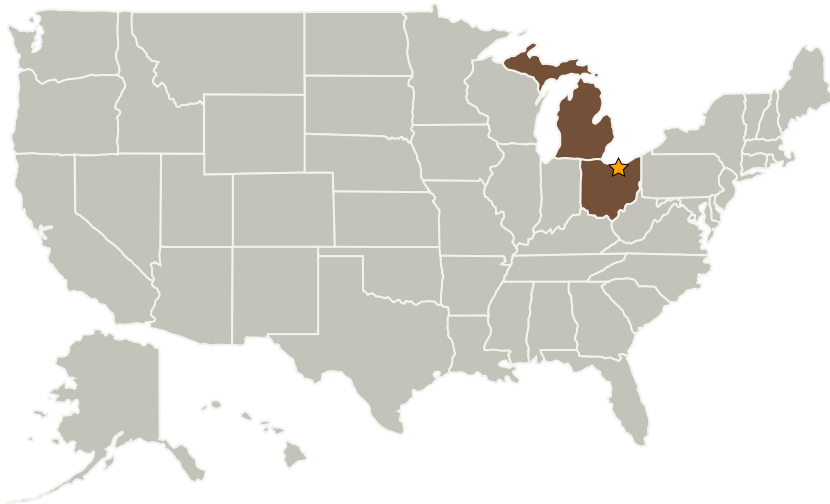
Project Introduction

Noise has become a primary consideration in the design and development of many products, particularly in aerospace, automotive and consumer product industries. Communities near airports are often exposed to high noise levels due to low flying aircraft in the takeoff and landing phases of flight and the major contribution to the overall noise is coming from the propulsion source noise. It is proposed to develop solutions based on integrated generalized acoustical holography and active noise control technologies that will enable the identification and reduction of turbomachinery noise. In this development, generalized acoustical holography will be used for noise source identification and active noise control together with passive control will be used for the noise reduction.

Anticipated Benefits

Potential NASA Commercial Applications: The adaptation of the developed system will have applications in many areas such as identification and reduction of noise radiated by internal combustion engine, exhaust noise, automotive interior noise as well as noise radiated by industrial noise sources such as vacuum pumps, forced air blowers, gas turbine exhausts, and airconditioning systems.

Primary U.S. Work Locations and Key Partners



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Glenn Research Center (GRC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
★ Glenn Research Center(GRC)	Lead Organization	NASA Center	Cleveland, Ohio
Comet Technology Corporation	Supporting Organization	Industry	Ann Arbor, Michigan

Primary U.S. Work Locations

Michigan	Ohio
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Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

Satha Raveendra

Technology Areas

Primary:

- TX15 Flight Vehicle Systems
 - └ TX15.1 Aerosciences
 - └ TX15.1.4 Aeroacoustics